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**FACTORS AFFECTING THE ADOPTION OF SOLAR
POWER SYSTEMS BY DOMESTIC USERS IN
WESTERN PROVINCE, SRI LANKA**

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Degree of Master of Business Administration in Management of Technology

Department of Management of Technology

Faculty of Business

University of Moratuwa

Sri Lanka

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DECLARATION

I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning to the best of my knowledge and belief. It does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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The above candidate has carried out research for the Masters Dissertation under my supervision. I confirm that the declaration made above by the student is true and correct.

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24.07.2024

Signature of the supervisor:

Date:

Dr. Thesara Jayawardane

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ABSTRACT

Renewable energy, harnessed from sources like sunlight, wind, and water, offers a promising path towards a sustainable energy future. Unlike fossil fuels, these resources are naturally replenished and generate minimal emissions. This shift towards clean energy can combat climate change, enhance energy security, and provide economic benefits. This study was mainly focused on solar energy adoption by domestic households and the main objective is to identify factors affecting the adaptation of solar power systems by domestic households of the western province of Sri Lanka. The study was employed the quantitative method and used various statistical analyzing tools such as MS Excel, SPSS and Smart PLS to analysis the survey data. Researcher conducted in-depth literature review to clearly identify and develop the research gap and other theoretical aspects of the research along with conceptual framework and study model. Through the study, it was made the effort to identify current intention level of domestic households to install solar power systems in the Western province. Further, based on a descriptive analysis of specific survey questions, and it has been identified that there is prevailing positive attitude towards solar power adoption within the province. The majority households, expressed satisfaction with the concept of adopting solar power systems in their households, highlighting their belief in the benefits of reducing electricity bills. Further, the researcher identified the factors affecting the adoption of solar power systems by domestic users in the western province. Some negative factors are negative social influence, low system characteristics, degraded facilitating methods, and individual differences such as low-income rates and a lack of education on system benefits. Finally, the recommendations were made by the researcher, in view of enhancing the adoption level of solar power systems by households in western province as well as island wide. Accordingly, these will be immensely benefitted to achieve energy related goals and objectives in line with the national interests of the Sri Lanka.

Key words: Renewable energy, solar photovoltaic (PV), electricity demand, social influence, System characteristics, Individual differences, Facilitating Conditions, Perceived ease of use, Perceived usefulness.

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LIST OF ABBREVIATIONS

Abbreviation	Description
SLAF	Sri Lanka Air Force
UoM	University of Moratuwa
PV	Photovoltaic
BDMM	Behavioral Decision Making Model
DoI	Diffusion of Innovation
TAM	Technology Acceptance Model
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
LED	Light Emitting Diode
CI	Confidence Interval

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